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FOREWORD

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TABLE OF CONTENTS

| | Page |
|--|------|
| Front Cover | 1 |
| Standard Form 298 | 2 |
| Foreword | 3 |
| Table of Contents | 4 |
| Introduction | 5 |
| Body | 5 |
| Appendices | 8 |
| Figure 1. Age-specific Hospital Admission rate of breast cancer by year among White Women | 9 |
| Figure 2. Age-specific Hospital Admission rate of breast cancer by year among African American Women | 10 |
| Table 1. Age-specific Hospital Admission rate of breast cancer by race: Year 1987 | 11 |
| Table 2. Age-specific Hospital Admission rate of breast cancer by race: Year 1988 | 12 |
| Table 3. Age-specific Hospital Admission rate of breast cancer by race: Year 1989 | 13 |
| Table 4. Mean and standard deviation of age, length of stay, number of diagnosis, and procedures by year and race | 14 |
| Table 5. Discharge Status of breast cancer patients by year | 15 |
| Table 6. Expected Source of payments of breast cancer patients by year | 16 |
| Table 7. Marital Status of breast cancer patients by year | 17 |
| Table 8. Regional distribution of breast cancer patients by year | 18 |

Introduction

The present study attempts to estimate age-specific hospital admission rates for breast cancer in African American (AA) and white women through analyzing NHDS data from 1988 to 1994 with 1987 data used for baseline comparison. Breast cancer admissions were not proportionally equal between AA and white women across the various age groups. For the 1987 data, young AA women had proportionately higher admission rates. It is necessary to see if this trend continued from 1988 to 1994, and if so, then specific guidelines may need to be set targeting this group of pre-menopausal AA women.

Body

We analyzed age-specific hospital admission rates for breast cancer based on 1988 and 1989 NHDS data. Tables 1-3 and Figures 1-2 show the distribution of female breast cancer cases and rates by age-group. In 1987, the relative risk of hospital admission due to breast cancer was higher among whites than AA for all age groups except at ages 40-49. In 1988, those rates were higher among AA than whites for all age groups except at ages 40-49. In 1989, however, the rates were higher among whites than those of AA in all age groups below age 50. In 1988 and 1989, there were 240,503 cases and 225,820 cases estimated in white women and 41,445 cases and 31,130 cases estimated in AA women, respectively. For both groups combined, the mean (s.d.) age ranged from 59.1 (14.3) to 59.4 (14.8), the mean (s.d.) length of a stay ranged from 6.0 (10.2) to 6.7 (8.8), the mean (s.d.) number of diagnoses ranged from 3.0 (1.8) to 3.4 (2.1), and the mean (s.d.) number of procedure ranged from 1.3 (1.0) to 1.6 (1.1) for the years 1988 and 1989 (Table 4).

Table 5 shows the discharge status of breast cancer patients from 1987 to 1989 for whites

and AA. The average percentage of routine discharge was higher among whites than AA. However, the average percentage of death was lower among whites than AA. Table 6 shows the percentages of expected sources of payments by year and race. While the proportion of Medicare patients constituted about 37% among whites, it was about 28% among AA for the year 1987 and 1988 but sharply increased to 42% at 1989. AA women were four times more likely to be paid by Medicaid than whites. The married category had the highest proportion in 1987 while the unknown category had the highest proportion in 1989 among whites. For AA women, single/divorce/widow/separate category was the highest for the years 1987 to 1989 (Table 7). The Southern regions had the highest rates, while the West had the lowest rates of hospital admission due to breast cancer. These rates were the same for both whites and AA for the year 1987 to 1989 (Table 8).

From RIDIT analysis, we found that mean ridit was 0.495 in 1988 and 0.504 in 1989 among whites with year 1987 as a reference group. That means, the subjects in 1988 were slightly younger than the subjects in 1987. Among whites, the subjects age distribution was slightly older in 1989 than subjects in 1987. However, among AA, mean ridit was 0.607 in 1988 and 0.609 in 1989 with year 1987 as a reference group. That is, the subjects in 1988 and in 1989 were significantly older than the subjects in 1987.

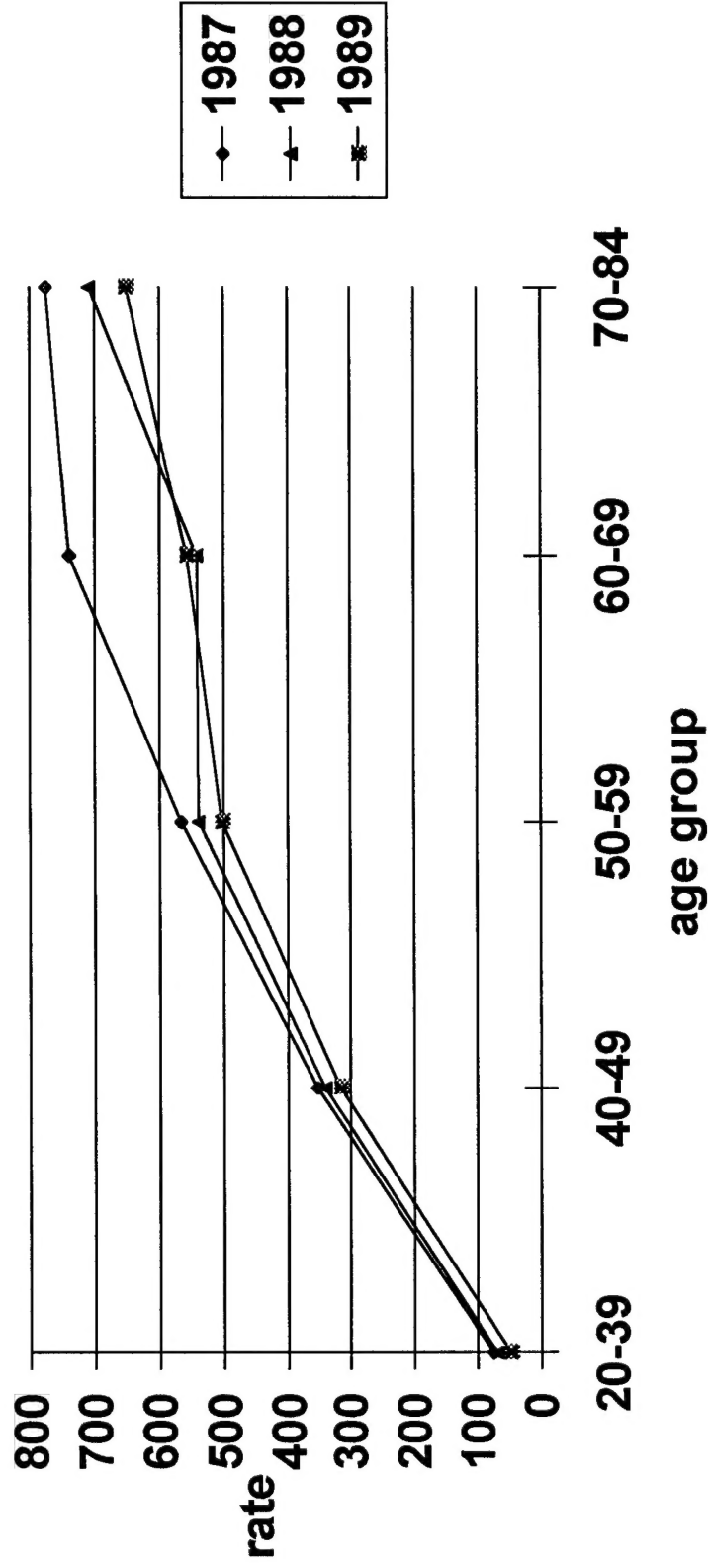
Figure 1 revealed that in 1987 the hospital admission rate due to breast cancer among whites increased linearly until age group 60-69 where after it began to plateau. Comparing age-specific rates of 1988 and 1989 with those of 1987, all the rates were lower than those of 1987 and the gap was greatest among the age group 60-69 for both years. The rate in the age group 70-84 was decreased in 1989 when compared to that of 1988. Figure 2 revealed that among AA, there was a notably low hospital admission rate among the 50-59 and 70-84 age groups in 1987.

The rates increased sharply in these age groups in 1988. In 1989, the rates demonstrated a more gradual increase until the age group 60-69 after which the rates increased sharply. With additional analysis of the 1990 through 1994 NHDS data, long term trends may be identified.

Difficulties:

Unfortunately we have not been able to identify and hire a statistician/research associate as of yet. If we cannot hire a person soon, we may need to seek an extension of the study. Due to the vacancy of the position, analysis of the comorbid diagnoses and procedures performed between these two groups for all the study periods has been delayed.

APPENDICES



rate: per 100,000

Figure 1. Age-specific Hospital Admission rate of breast cancer
by year among White Women

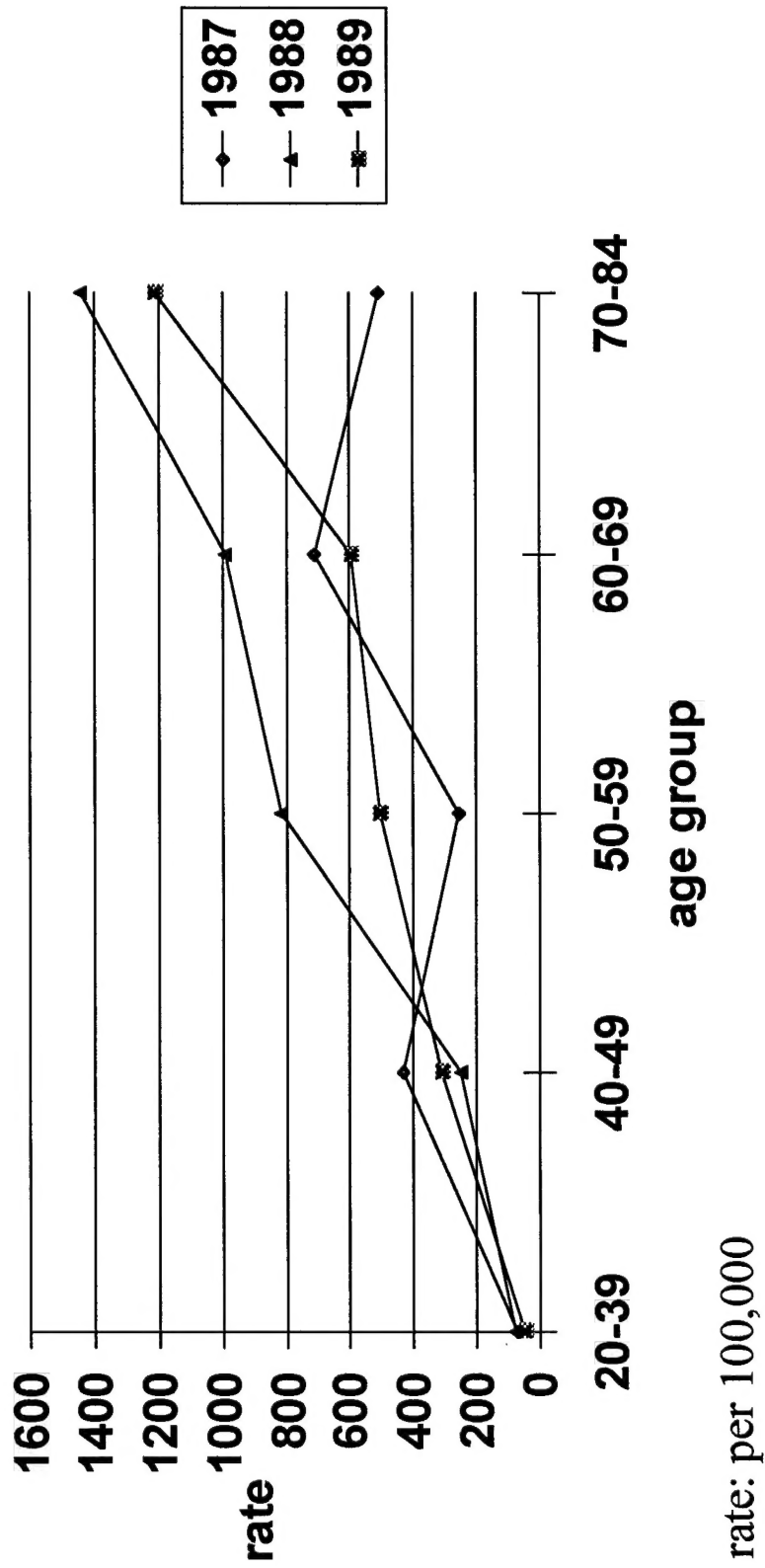


Figure 2. Age-specific Hospital Admission rate of breast cancer
by year among African-American Women

Table 1. Age-specific Hospital Admission rate of Breast cancer by race: year 1987

| Age | <u>White</u> | | | <u>AA</u> | | | RR** |
|-------|--------------|---------|------|-----------|-------|--------|------|
| | Rate * | n | % | Rate * | n | % | |
| 20-39 | 76.89 | 26,233 | 9.9 | 74.63 | 4,025 | 15.9 | 0.97 |
| 40-49 | 351.61 | 42,753 | 16.1 | 433.67 | 6,813 | 26.9 | 1.23 |
| 50-59 | 566.1 | 55,688 | 20.9 | 257.6 | 3,220 | 12.7 | 0.46 |
| 60-69 | 740.5 | 72,478 | 27.2 | 712.4 | 7,295 | 28.8 | 0.96 |
| 70-84 | 774.5 | 69,037 | 25.9 | 509.4 | 3,963 | 15.7 | 0.66 |
| | | 266,189 | | | | 25,316 | |

* rate per 100,000

** Relative Risk: AA rate/ White rate

Table 2. Age-specific Hospital Admission rate of Breast cancer by race: year 1988

| Age | <u>White</u> | | | <u>AA</u> | | | RR** |
|-------|--------------|---------|------|-----------|--------|------|------|
| | Rate * | n | % | Rate * | n | % | |
| 20-39 | 69.3 | 23,562 | 9.8 | 79.5 | 4,333 | 10.5 | 1.15 |
| 40-49 | 340.3 | 43,270 | 18.0 | 252.3 | 4,135 | 10.0 | 0.74 |
| 50-59 | 538.1 | 52,923 | 22.0 | 815.6 | 10,350 | 25.0 | 1.52 |
| 60-69 | 540.1 | 53,796 | 22.4 | 992.4 | 10,569 | 25.5 | 1.84 |
| 70-84 | 710.2 | 66,952 | 27.7 | 1440.6 | 12,058 | 29.1 | 2.03 |
| | | 240,503 | | | 41,445 | | |

* rate per 100,000

** Relative Risk: AA rate/ White rate

Table 3. Age-specific Hospital Admission rate of Breast cancer by race: year 1989

| Age | <u>White</u> | | | <u>AA</u> | | | RR** |
|-------|--------------|--------|------|-----------|---------|--------|------|
| | Rate * | n | % | Rate * | n | % | |
| 20-39 | 49.9 | 16,927 | 7.5 | 46.3 | 2,541 | 8.2 | 0.93 |
| 40-49 | 317.0 | 41,942 | 18.6 | 312.1 | 5,347 | 17.2 | 0.99 |
| 50-59 | 500.7 | 49,207 | 21.8 | 502.9 | 6,472 | 20.8 | 1.00 |
| 60-69 | 555.5 | 55,382 | 24.5 | 599.0 | 6,481 | 20.8 | 1.08 |
| 70-84 | 651.2 | 62,362 | 27.6 | 1210.5 | 10,289 | 33.0 | 1.86 |
| | | | | | 225,820 | 31,130 | |

* rate per 100,000

** Relative Risk: AA rate/ White rate

Table 4. Mean and standard deviation of age, length of stay, number of diagnosis, and procedures by year and race

| | White | | | | | |
|----------------------|-------------|-------|-------------|------|-------------|------|
| | <u>1987</u> | | <u>1988</u> | | <u>1989</u> | |
| | \bar{x} | s.d. | \bar{x} | s.d. | \bar{x} | s.d. |
| Age | 58.92 | 13.87 | 59.06 | 14.3 | 59.44 | 13.8 |
| Length of stay | 6.07 | 7.26 | 6.13 | 7.6 | 5.97 | 10.2 |
| Number of diagnosis | 3.01 | 1.92 | 3.04 | 1.8 | 3.20 | 1.87 |
| Number of procedures | 1.57 | 1.09 | 1.58 | 1.1 | 1.61 | 1.12 |

| African American | | | | | | |
|----------------------|-------------|-------|-------------|------|-------------|------|
| | <u>1987</u> | | <u>1988</u> | | <u>1989</u> | |
| | \bar{x} | s.d. | \bar{x} | s.d. | \bar{x} | s.d. |
| Age | 53.55 | 14.69 | 59.44 | 12.8 | 59.44 | 14.8 |
| Length of stay | 7.59 | 10.3 | 6.27 | 8.0 | 6.72 | 8.8 |
| Number of diagnosis | 3.09 | 1.95 | 3.01 | 1.77 | 3.38 | 2.06 |
| Number of procedures | 1.71 | 1.01 | 1.49 | 1.0 | 1.27 | 0.97 |

Table 5. Discharge Status of breast cancer patients by year

| | White | | | | | |
|---------------------------------|--------------|------|-------------|------|-------------|------|
| | <u>1987</u> | | <u>1988</u> | | <u>1989</u> | |
| | n | % | n | % | n | % |
| Routine discharge | 234,777 | 88.1 | 212,709 | 88.4 | 199,064 | 88.2 |
| Transfer to short-term hospital | 1,519 | 0.6 | 1,198 | 0.5 | 1,979 | 0.9 |
| Transfer to long-term care | 9,244 | 3.5 | 7,293 | 3.0 | 8,520 | 3.8 |
| Dead | 10,520 | 4.0 | 11,607 | 4.8 | 7,395 | 3.3 |
| Not stated | 10,110 | 3.8 | 7,696 | 3.2 | 7,699 | 3.4 |

| African American | | | | | | |
|---------------------------------|-------------|------|-------------|------|-------------|------|
| | <u>1987</u> | | <u>1988</u> | | <u>1989</u> | |
| | n | % | n | % | n | % |
| Routine discharge | 21,147 | 83.5 | 37,014 | 89.3 | 26,949 | 86.6 |
| Transfer to short-term hospital | 205 | 0.8 | 0 | 0.0 | 45 | 0.1 |
| Transfer to long-term care | 609 | 2.4 | 453 | 1.1 | 1,447 | 4.7 |
| Dead | 2,656 | 10.5 | 1,781 | 4.3 | 1,926 | 6.2 |
| Not stated | 575 | 2.3 | 1,875 | 4.5 | 763 | 2.5 |

Table 6. Expected Source of payments of breast cancer patients by year

| | White | | | | | |
|-----------------------------------|-------------------------|------|-------------|------|-------------|------|
| | <u>1987</u> | | <u>1988</u> | | <u>1989</u> | |
| | n | % | n | % | n | % |
| Medicare | 103,099 | 38.7 | 88,836 | 36.9 | 85,324 | 37.8 |
| Medicaid | 8,104 | 3.0 | 6,038 | 2.5 | 7,519 | 3.3 |
| Blue Cross/ other private ins. | 140,364 | 52.7 | 129,869 | 54.0 | 108,148 | 47.9 |
| | | | | | | |
| | African American | | | | | |
| | <u>1987</u> | | <u>1988</u> | | <u>1989</u> | |
| | n | % | n | % | n | % |
| Medicare | 7,075 | 28.0 | 11,769 | 28.4 | 13,157 | 42.3 |
| Medicaid | 2,971 | 11.7 | 6,588 | 15.9 | 3,851 | 12.4 |
| Blue Cross/ other private ins. | 12,339 | 48.7 | 18,526 | 44.7 | 11,645 | 37.4 |

Table 7. Marital Status of breast cancer patients by year

| | White | | | | | | | | |
|-----------------------------------|---------|-------------|------|---------|-------------|------|---------|-------------|------|
| | n | <u>1987</u> | % | n | <u>1988</u> | % | n | <u>1989</u> | % |
| Married | 125,137 | | 47 | 87,269 | | 36.3 | 67,639 | | 30.0 |
| Single/Widow/ Divorce/Separate | 77,845 | | 29.2 | 45,736 | | 19.0 | 51,535 | | 22.8 |
| Unknown | 63,207 | | 23.7 | 107,498 | | 44.7 | 106,646 | | 47.2 |

| | African American | | | | | | | | |
|-----------------------------------|------------------|-------------|------|--------|-------------|------|--------|-------------|------|
| | n | <u>1987</u> | % | n | <u>1988</u> | % | n | <u>1989</u> | % |
| Married | 6,658 | | 26.3 | 13,915 | | 33.6 | 7,503 | | 24.1 |
| Single/Widow/ Divorce/Separate | 11,972 | | 47.3 | 15,293 | | 36.9 | 15,333 | | 49.3 |
| Unknown | 6,686 | | 26.4 | 12,237 | | 29.5 | 8,294 | | 26.6 |

Table 8 . Regional distribution of breast cancer patients by year

| | White | | | | | |
|------------|--------------|------|-------------|------|-------------|------|
| | <u>1987</u> | | <u>1988</u> | | <u>1989</u> | |
| | n | % | n | % | n | % |
| North East | 58,315 | 21.9 | 72,306 | 30.1 | 64,731 | 28.7 |
| Mid West | 76,671 | 28.8 | 51,085 | 21.2 | 64,295 | 28.5 |
| South | 82,310 | 30.9 | 83,941 | 34.9 | 76,604 | 33.9 |
| West | 48,893 | 18.4 | 33,171 | 13.8 | 20,190 | 8.9 |

| | African American | | | | | |
|------------|-------------------------|------|-------------|------|-------------|------|
| | <u>1987</u> | | <u>1988</u> | | <u>1989</u> | |
| | n | % | n | % | n | % |
| North East | 6,429 | 25.4 | 13,912 | 33.6 | 10,064 | 32.3 |
| Mid West | 4,737 | 18.7 | 7,370 | 17.8 | 5,658 | 18.2 |
| South | 12,912 | 51.0 | 18,858 | 45.5 | 13,910 | 44.7 |
| West | 1,238 | 4.9 | 1,305 | 3.1 | 1,498 | 4.8 |